Corporation of India Limited, in which he has stated the present capacity of production of electricity in the Nuclear area in the country to be 10,000 MW;

(b) if so, whether it is a fact that Government have recently assessed the capacity of production of electricity in the nuclear field in the country; and

(c) if so, this assessment and the actual production in the year 2007-08?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) The correct statement made by Chairman and Managing Director, Nuclear Power Corporation of India Limited was "the country has enough resources of natural uranium to support the operation of 10,000 MWe of Pressurised Heavy Water Reactors".

(b) and (c) The target for electricity generation in the year 2007-08 is 22714 Million Units (MUs). The production in the first seven months has been 10189 MUs. Based on current assessment, the target for the year 2007-08 is expected to be met.

**Atomic Energy Sector**

† 419. SHRI RAM JETHMALANI:
SHRI RAJ MOHINDER SINGH MAJITHA:

Will the PRIME MINISTER be pleased to state:

(a) whether it is a fact that five electricity generating units of Atomic Energy Sector functioning in the country have been closed simultaneously due to the non-availability of fuel;

(b) if so, the fact thereof;

(c) the details of the units that have been closed and the yearly requirement of fuel for their operation; and

(d) whether there is dependency on import in order to fulfil the fuel requirement of the said units?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) No, Sir. Reactors are periodically shut down for various maintenance and inspection jobs as and when required.

(b) Not applicable.

(c) No reactors have been closed due to non-availability of fuel.

(d) No, Sir.

**Hydro-power generation**

420. SHRIMATI SHOBHANA BHARTIA: Will the PRIME MINISTER be pleased to state:

(a) whether dip in hydro power generation raises alarm bells as the share of hydroelectric capacity in the country's total power generation capacity has diminished over the last three and half decades from about 46 per cent in 1970, it dropped to 40 per cent in 1980,29 per cent in 1990 and, again to just 20 per cent in 2007;

† Original notice of the question was received in Hindi.

(b) whether the States with great potential in this area such as Himachal Pradesh has miserably failed to tap it and private sector initiatives, too, have rarely fructified; and

(c) if so, the steps and measures Government propose to take to improve hydro-power generation in the country?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) to (c) As can be seen from the table given below, while there has been a steady growth in the installed hydro capacity of the country, the corresponding increase in thermal capacity has outpaced the hydro capacity addition because of the following reasons:—

(i) Hydro power plants generally entail higher construction risks and have longer gestation periods.

(ii) They are generally located in remote locations with poor accessibility and infrastructure which has to be built at the cost of the project.

(iii) They are more prone to time and cost overruns on account of higher geological risks

(iv) They generally entail more Rehabilitation and Resettlement issues and therefore often suffer due to local agitations.

*Share of Hydro Power in total installed capacity of the country*

| Year (March 31) | Hydro capacity (MW) | Thermal *capacity (MW) | Nuclear (MW) | Total capacity (MW) | Hydro Power as % of total installed capacity |
|---|---|---|---|---|---|
| 1970 | 6,135 | 7,968 | - | 14,103 | 43.50 |
| 1980 | 11,384 | 16,424 | 640 | 28,448 | 40.02 |
| 1990 | 18,307 | 43,764 | 1,565 | 63,636 | 28.77 |
| 2007 | 34,654 | 93,775 | 3,900 | 1,32,329 | 26,19 |

*including steam, gas, diesel and renewable energy Source: CEA

The reassessment studies completed by the Central Electricity Authority in 1987 have placed the total hydro potential of Himachal Pradesh at 18820 MW of installed capacity. As on 31.10.2007,6085.5 MW (32.34%) of the potential has been developed and 4435 MW (23.57%) of the potential is under development in Himachal Pradesh.

Two hydro power generating stations (above 25 MW installed capacity) with installed capacity of 386 MW are under operation and five (5) hydro-power generating projects are under construction in the private sector in Himachal Pradesh. 8 hydro-electric projects with installed capacity of 1506 MW have been allocated to the private sector for preparation of DPR and subsequent development. 29 more hydro-electric projects with installed capacity of 4,292 MW are also proposed to be allocated to the private sector by the State Government for preparation of DPR and implementation. Thus, the private sector is also reportedly playing an active role in the development of hydro-electric potential in Himachal Pradesh.

The Government has accorded a high priority for hydro power development and has taken a number of policy initiatives in this direction. Some of these are enumerated below:

Policy initiatives taken for increasing the hydro capacity

* Policy on hydro power development 1998—lays emphasis on exploitation of vast hydro-electric potential, on strengthening the role of Public Sector Undertakings/ State Electricity Utilities, increasing private investments and basin-wise development of hydro potential.
* Electricity Act, 2003—permits direct commercial relationship between consumers/ traders, right to open access through State/Central transmission utilities, enlarges the scope of captive power plants and has emphasized the development of hydro power.
* National Electricity Policy—lays maximum emphasis on full development of feasible hydro potential, debt financing of longer tenure.
* Mega Power Projects Policy—the import of capital equipments free of custom duty, deemed export benefit for domestic suppliers, income tax holiday regime for a period often years. The threshold limit to obtain the mega power status is 1000 MW for thermal and 500 MW for hydro projects. Further the minimum qualifying threshold capacity for hydro-electric projects has been reduced to 350 MW for the projects located in special category States of Jammu and Kashmir, Sikkim and North-Eastern States.

**Generation of nuclear power**

421. SHRI RAJKUMAR DHOOT: Will the PRIME MINISTER be pleased to state the long term cost of generating nuclear power, including capital and recurring costs in our country and in what way it compares with that the coal based power projects?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): The cost of generation of nuclear power is characterized by lower energy charge (fuel) and higher capacity charge (financing costs). As a consequence, the cost of generation over the years remains almost stable and increase is only marginal on account of lower fraction of energy charge. Currently tariff for one nuclear power station is 95 paise/kWh and that of three stations is less than Rs. 2/kWh with an average for all power stations being Rs. 2.30/kWh.

The generation cost of coal-based stations varies according to distance from coal mines. This is on account of the transportation cost of coal. The tariffs of nuclear power stations are competitive with those of coal-based stations located away from coal mines.

**Safety measures in nuclear reactors**

422. SHRI C. PERUMAL: Will the PRIME MINISTER be pleased to state:

(a) whether Government are aware that nuclear reactors in our country have less safety measures;

(b) if so, the safety measures being followed in all reactors to control leakage of radiation; and

(c) the details thereof?

THE MINISTER OF STATE IN THE PRIME MINISTER'S OFFICE (SHRI PRITHVIRAJ CHAVAN): (a) to (c) All Indian Nuclear Reactors follow stringent international safety standards and have adequate shielding and containment to prevent leakage or discharge of radioactivity beyond the limits specified by the Atomic Energy Regulatory Board (AERB).